

**REMARKS**

Claims 11-25 were previously pending in the application. Claims 11-25 remain unchanged. Claims 11, 15, and 23 are independent.

**The Claimed Invention**

Conventional appliances sometimes are operated in a manner in which a fixedly pre-determined amount of washing or rinsing agents is added to a cleaning liquid and this brings with it the disadvantage that, during the washing or rinsing process, the quantity of washing or rinsing agent poured into the appliance by the user is completely used and consumed without taking into account the quantity of washing and rinsing agent actually required. Dishwashers are known in which the water hardness of the cleaning liquid is determined by suitable sensors to determine the amount of rinse aid added at the end of the rinsing program. However, other crucial criteria for the quantity of cleaning agent required, such as for example, the loading state of the dishwasher or the type of contamination of the items to be cleaned are not taken into account.

The present invention as exemplified by, for example, an exemplary embodiment recited in independent claim 11 of the present application, relates to an appliance operable to carry out at least one cleaning process using cleaning liquid. The appliance includes an assembly for placing into contact with one another a cleaning liquid and at least one item to be cleaned. Also, the appliance includes a system for supplying cleaning agent into the cleaning liquid, the system including a sensor that determines the content of washing-active substances in the cleaning liquid during the cleaning process and a dosing device that alternately supplies additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid in the event that the content of washing-active substances is above a predetermined upper value.

The present invention as exemplified by, for example, another exemplary embodiment recited in independent claim 15 of the present application, relates to an

method for operating an appliance operable to carry out at least one cleaning process using cleaning liquid, the method comprising the steps of determining a content in a cleaning liquid of washing-active substances that are supplied therein via a supply of cleaning agent into the cleaning liquid by a cleaning agent supply system; supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; and supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value.

In this manner, the present invention determines the content of washing-active substances in the cleaning liquid continuously during the cleaning process and, on this basis, regulates the addition of cleaning agents to the cleaning liquid independently of influences such as the degree of contamination, temperature and water hardness in order to achieve the optimal content of washing active substances in the cleaning liquid. Thus, both under-dosing with inadequate cleaning effect and also over-dosing with negative economical and ecological consequences can be avoided. In this way, the cleaning performance and the consumption of resources are optimised and the environmental influences are minimized. See, e.g., page 3, lines 25-30; page 4, lines 1-5, and 27-30; page 5, lines 1-4; page 7, lines 18-30; page 8, lines 1-4.

**The Rejection under 35 U.S.C. § 102**

Claims 11-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by the Buttner et al. reference (GB 2052251 A).

Applicant respectfully traverses this rejection.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. [...] The identical invention must be shown in as complete detail as is contained in the ... claim." M.P.E.P. § 2131.

The Buttner et al. reference does not explicitly disclose a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value, as recited by independent claim 11.

As explained above, these features are important for avoiding both under-dosing with inadequate cleaning effect and also over-dosing with negative economical and ecological consequences. In this way, the cleaning performance and the consumption of resources are optimised and the environmental influences are minimized. See, e.g., page 3, lines 25-30, and page 4, lines 1-5.

The Buttner et al. reference discloses controlling at least one of the volume of water supplied to the machine, the number of changes of such water and the metering of at least one additive. The Buttner et al. reference does not explicitly disclose a dosing device that adds water during the cleaning process. Instead, the Buttner et al. reference describes “metering” the at least one additive, not “metering” the supply of water. This appears to show a distinction between the manner in which the additive is controlled and the manner in which the volume of water is controlled. Similarly, when describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. Hence, the Buttner et al. reference appears to be referencing individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water.

As explained above, the Buttner et al. reference does not explicitly disclose a dosing device that alternately supplies additional cleaning agent to the cleaning liquid in the event that the sensed content of washing-active substances is below a predetermined lower value and supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value, as recited by independent claim 11.

For at least the foregoing reasons, the Buttner et al. reference does not disclose all of the features of independent claim 11.

Claim 12-14 are patentable over the Buttner et al. reference by virtue of their dependency from claim 11, as well as for the additional features recited therein.

Applicant respectfully requests withdrawal of this rejection.

**The Rejections under 35 U.S.C. § 103**

Claims 15-20 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Buttner et al. reference. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Buttner et al. reference in view of the Livingston et al. reference (U.S. Patent No. 4,509,543).

Applicant respectfully traverses these rejections.

**The Rejection over the Buttner et al. Reference**

Regarding claim 15, the Office Action acknowledges that the Buttner et al. reference teaches that the controller uses the measured content of washing-active substances in the liquid to control the volume of water supplied to the washing machine and the number of changes of the water (Page 1, lines 82-100 Page 2, lines 21-35, 96-107). The Office Action alleges that it is reasonably expected that this water is fresh water. The Office Action acknowledges that the Buttner et al. reference does not expressly disclose that this water is supplied in the event that the content of washing-active substances is determined to be above a predetermined upper value. However, the Office Action alleges that it would have been obvious to one of ordinary skill in the art to supply additional water to the cleaning liquid to correct a potential overdosing of cleaning agent with a reasonable expectation of success (MPEP 2143 E).

Contrary to the assertions in the Office Action, Applicant respectfully submits that the Buttner et al. reference clearly does not disclose the method steps defined by independent claims 15 and 23.

For example, the Buttner et al. reference does not teach or suggest “supplying fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a predetermined upper value,” as recited in claim 15. Moreover, the Buttner et al. reference does not teach or suggest “supplying fresh water to the cleaning liquid during the at least one cleaning process when the content of washing-active substances above the predetermined upper value,” as recited in claim 23.

The Buttner et al. reference is silent with respect to adding water during the cleaning process. Instead, the Buttner et al. reference simply describes “metering” the at least one additive, not “metering” the supply of water. When describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. Hence, the Buttner et al. reference appears to be referencing individual rinsing cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water, not to the cleaning process as claimed.

Furthermore, contrary to the assertions in the Office Action, Applicant respectfully submits that it would not have been obvious to one of ordinary skill in the art to supply additional water to the cleaning liquid during the at least one cleaning process to correct a potential overdosing of cleaning agent with a reasonable expectation of success.

As explained above, the Buttner et al. reference discloses controlling at least one of the volume of water supplied to the machine, the number of changes of such water and the metering of at least one additive. The Buttner et al. reference does not explicitly disclose that water is added during the cleaning process.

Moreover, the Buttner et al. reference describes “metering” the at least one additive, but does not mention “metering” the supply of water. This appears to show a distinction between the manner in which the additive is controlled and the manner in which the volume of water is controlled. Similarly, when describing the water, the Buttner et al. reference generally refers to controlling how many rinsing operations are needed. Hence, the Buttner et al. reference appears to be referencing individual rinsing

cycles when describing controlling at least one of the volume of water supplied to the machine and the number of changes of such water, not supplying additional water to the cleaning liquid during the at least one cleaning process, as claimed.

The Response to Arguments of the final Office Action (at page 10, numbered paragraph 31) asserts that the control system is fully capable of supplying fresh water to the cleaning liquid during the washing cycle, and therefore, that it allegedly would have been obvious to one of ordinary skill in the art to modify Buttner to include supplying fresh water to the cleaning liquid during the washing cycle in the event that the content of washing-active substances is above the optimum value.

Contrary to these assertions, Applicant respectfully submits that one of ordinary skill in the art would not have had an apparent reason to supply fresh water to the cleaning liquid during the washing cycle.

The Buttner et al. reference discloses that the pH-value drops during the course of the washing program. Hence, one of ordinary skill in the art would not have had an apparent reason to modify the Butler et al reference in the manner alleged, or a reasonable expectation of success in modifying the Buttner et al. reference to supply additional water to the cleaning liquid, as alleged. Applicant respectfully submits that it would not have been obvious to add additional water, which would further reduce the pH-value, when the Buttner et al. reference is concerned with ensuring that the pH-value is brought up to a desired level.

The Office Action also asserts that the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. Contrary to the assertions in the Office Action, Applicant respectfully submits that the claimed invention does not involve a mere selection of the order of performing process steps. Instead, claim 15 clearly recites supplying additional cleaning agent to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be below a predetermined lower value; **and supplying fresh water** to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is determined to be above a

predetermined upper value. Clearly, if the order of the rinsing step was selected such that the rinsing step was performed during the washing process, the principal of the operation of the cleaning process would be detrimentally affected by such a simultaneous rinsing step. Indeed, the rinsing step would cause the pH-value to be lower, thereby requiring the additional of even more additive to raise the washing agent concentration to the desired level.

For at least the foregoing reasons, independent claims 15 and 23 are patentable over the Buttner et al. reference.

Claim 16-20 and 24-25 are patentable over the Buttner et al. reference by virtue of their dependencies from claims 15 and 23, respectively, as well as for the additional features recited therein.

Applicant respectfully requests withdrawal of this rejection.

**The Rejection over the Buttner et al. Reference and the Livingston et al. Reference**

The Livingston et al. reference does not make up for the deficiencies of the Buttner et al. reference.

The Livingston et al. reference clearly does not disclose a dosing device that supplies fresh water to the cleaning liquid during the at least one cleaning process in the event that the content of washing-active substances is above a predetermined upper value, as recited by independent claim 11. Indeed, the Office Action does not rely on this reference for teaching these features of claim 11.

Thus, none of the applied references discloses or suggests the subject matter defined by independent claim 11, from which claims 21 and 22 depend.

Applicant respectfully requests withdrawal of this rejection.

**CONCLUSION**

In view of the above, entry of the present Amendment and allowance of Claims 11-25 are respectfully requested. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,

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